**What, in general terms, is the distinction between computer organization and computer architecture?**

|  | **Computer Architecture** | **Computer Organization** |
| --- | --- | --- |
| Purpose | Computer architecture explains what a computer should do. | Computer organization explains how a computer works. |
| Target | Computer architecture provides functional behavior of computer system. | Computer organization provides structural relationships between parts of computer system. |
| Design | Computer architecture deals with high level design. | Computer organization deals with low level design. |
| Actors | Actors in Computer architecture are hardware parts. | Actor in computer organizaton is performance. |
| Order | Computer architecture is designed first. | Computer organization is started after finalizing computer architecture. |

| **Computer Architecture** | **Computer Organization** |
| --- | --- |
| Computer Architecture is involved with the method hardware elements are linked to form a computer system. | Computer Organization is involved with the mechanism and behaviour of a computer system as view by the client. |
| It facilitates as the interface between hardware and software. | It manage with the elements of a connection in a system. |
| A programmer can view architecture in condition of instructions, addressing modes, and registers. | It defines the realization of structure. |
| Computer Architecture handle with high-level design problem. | Computer Organization handle with low-level design problem. |
| It supports us to learn the functionalities of a system. | It tells us how accurately all the methods in the system are organized and interconnected. |
| It examines instruction formats, instruction set and addressing technology. It also contains the description of several functional modules such as CPU and memories. | The function of computer organization is to find out and examines the organizational mechanism for its proper operations. |

Source : <https://www.tutorialspoint.com/>

**What, in general terms, is the distinction between computer structure and computer function?**

****Computer architecture**** refers to those attributes of a system visible to a programmer or, put another way, those attributes that have a direct impact on the logical execution of a program.

****Computer organization**** refers to the operational units and their interconnections that realize the architectural specifications. Examples of architectural attributes include the instruction set, the number of bits used to represent various data types (e.g., numbers, characters), I/O mechanisms, and techniques for addressing memory. Organizational attributes include those hardware details transparent to the programmer, such as control signals; interfaces between the computer and peripherals; and the memory technology used.

**What are the four main functions of a computer?**

Data input

Data processing.

Information output.

Data and information storage.

**List and briefly define the main structural components of a computer**.

* **Central processing unit** - Controls the computer's operation and conducts data processing activities; commonly referred to as processor.
* **Main memory** - Stores data
* **I/O -** Moves data between the computer and its external environment

1. **System interconnection**: **List and briefly define the main structured components of a processor**.

* **Control Unit** : Controls the operation of the CPU and hence the computer
* **Arithmetic and logic unit** (ALU): Performs the computers data processing functions
* **Registers**: Provides storage internal to the CPU
* **CPU interconnection :** Some mechanism that provides for communication among the control unit, ALU, and registers

**01. Computer architecture refers to those attributes of a system visible to a programmer.**

**02. Computer Organization refers to the operational units and their interconnections that realize the architectural specifications.**

**03. Control signals, interfaces between the computer and peripherals, and the memory technology used are all examples of Organizational attributes.**

**04. The instruction set, the number of bits used to represent various data types, I/O mechanisms and techniques for addressing memory are all examples of Architectural attributes.**

**05. The System/370 architecture is the architecture of IBM’s mainframe product line**.

**06. Structure is the way in which the components are interrelated.**

**07. Function is the operation of each individual component as part of the structure.**

**08. The basic functions that a computer can perform are: data processing, data movement, control, and Data storage**

**09. When data are received from or delivered to a device that is directly connected to the computer, the process is known as I/O**

**10. The four main structural components of the computer are: main memory, I/O, system interconnection, and CPU**

**11. Often referred to as processor the CPU controls the operation of the computer and performs its data processing functions.**

**12. A common example of system interconnection is by means of a System bus , consisting of a number of conducting wires to which all the other components attach**

**13. The major structural components of the CPU are: control unit, register, CPU interconnection, and Arithmetic and logic unit (ALU)**

**14. The Control unit controls the operation of the CPU and hence the computer.**